Liberty OHM
Established 1989

April 26, 2011

Mr. Marty Foutch
Facilities Director
Bixby Public Schools
109 N. Armstrong
Bixby, OK 74008

Re: Bixby North Elementary IAQ – Kindergarten Hallway

Dear Mr. Foutch,

On April 15 & 21, 2011, Liberty OHM visited Bixby North Elementary, located at 7701 E. 121st Street. The purpose of this visit was to perform a survey and sampling of the north Kindergarten Hallway, outside of classrooms 116-123, after being notified of a potential mold type odor in the area.

FINDINGS

Our initial inspection on April 15th showed elevated Penicillium/Aspergillus levels in the hallway, with visible mold behind the baseboard in Rm. 123 on the south wall. Surface sampling showed concentrations of Penicillium/Aspergillus and Stachybotrys.

Liberty OHM returned on April 21st to perform a more extensive inspection and sampling. Lab results show elevated levels of Penicillium/Aspergillus and Stachybotrys, with the highest levels in Rm. 116 and surface concentrations of Penicillium/Aspergillus on blue bookshelf in Rm. 118.

The following visual observations were noted:

Rm. 116

- Visible Mold (VM) and visible water damage under cabinet on the east wall
- VM on loose drywall in HVAC closet

Rm. 123

- VM behind baseboards on south wall

Rm. 118

- VM on baseboards around blue bookshelf

See Recommendations below.

RECOMMENDATIONS

Based on our visual inspection and sampling data, we recommend the following:

Occupancy of classrooms 116, 118, 121, and 123 is not recommended until remediation has been completed.

Under negative pressure containment as described below, perform the following work in the following areas:

1. Isolate and contain hallway from classrooms 116 – 123 north to exit door.
2. Rm. 116 – Remove cabinet on east wall. RR east wall 2' beyond all VM and WD. Remove mold impacted loose drywall in HVAC closet.
3. Rm. 123 – RR south wall 2' in all directions beyond VM. (Approx. center of wall)
4. Rm. 118 – Clean and treat baseboards with antimicrobial around blue bookshelf.
5. RR Carpet in classrooms 116, 118, 121, and 123.
6. HEPA vacuum and moist wipe with antimicrobial all blue bookshelves in classrooms 116, 118, 121, and 123.
7. Following removal and before build back, HEPA vacuum, wipe, and clean with antimicrobial by appropriate method all walls, floors and other non-porous items in the remediated isolation zone. Remove/replace any wall fiberglass insulation associated with the abatement areas.
8. Following removal and before build back, scrub air in classrooms 116, 118, 121, and 123 and associated hallway with HEPA equipped air scrubbers for at least 72 hours, ensuring a minimum of 5 air exchanges per hour, then contact Liberty OHM to perform a final PRV or Post Remediation Verification survey and sampling prior to build-back.
9. Abatement of materials should continue an additional two (2) feet beyond any previously undetected mold or water damage discovered during remediation.

Recommendations are based in part on professional publication guidelines including the IICRC S500 Standard and Reference Guide for Professional Water Damage Restoration and IICRC S520 Standard and Reference Guide for Professional Mold Remediation. These publications are incorporated into the requirements of the abatement contractor selector to perform the work.

Additional Protocols

All mold remediation work should be performed by a qualified mold remediation contractor utilizing appropriate personal protective equipment and under strict environmental controls. All work areas should be placed under negative pressure containment (i.e. 6 mil. Plastic sheeting and HEPA filtration) and exhausted to the outside, where applicable. All HVAC return air ducts, floor, and/or ceiling ducts should be sealed prior to any remediation work. All structural materials (i.e. wall studs, headers, window frames, etc) should be cleaned and treated with an antimicrobial such as Microban® or equivalent and properly dried. Once dry, all affected structural materials should be encapsulated with a primer/sealer, we recommend using Fosters 40/20® or equivalent.

See Tables 1 & 2 below for results from April 15, 2011.

See Tables 3 & 4 below for results from April 21, 2011

Table 1
Bixby North Elementary
Kindergarten Hallway – IAQ
April 15, 2011
Spore Trap Analysis

Location	Total spores/m3	Species	Raw count	Calc. count	% of total
1: Outside	1,500	Cladosporium	66	880	61
		Basidiospores	21	280	19
		Penicillium/Aspergillus types	**9**	**120**	**8**
		Ascospores	8	110	7
		Smuts, Periconia, Myxomycetes	3	40	3
		Alternaria	1	13	1
		Oidium	1	13	1
2: N. Kindergarten Hallway @ Rm. 123	2,200	Cladosporium	59	790	36
		Penicillium/Aspergillus types	58	770	35
		Basidiospores	26	350	16
		Smuts, Periconia, Myxomycetes	7	93	4
		Pithomyces	3	40	2
		Curvularia	2	27	1
		Alternaria	2	27	1
		Epicoccum	2	27	1
		Other brown	2	27	1
		Ascospores	2	27	1
		Bipolaris/Drechslera group	1	13	1

Table 1 Bixby North Elementary Kindergarten Hallway – IAQ April 15, 2011 Spore Trap Analysis					
Location	**Total spores/m 3**	**Species**	**Raw count**	**Calc. count**	**% of total**
3: S. Kindergarten Hallway	2,600	Penicillium/Aspergillus types	75	1,000	38
		Cladosporium	73	970	37
		Basidiospores	24	320	12
		Smuts, Periconia, Myxomycetes	13	170	7
		Chaetomium	3	40	2
		Other brown	3	40	2
		Ascospores	3	40	2
		Alternaria	2	27	1
		Epicoccum	1	13	1

Table 2 Bixby North Elementary Kindergarten Hallway – Rm. 123 April 15, 2011 Quantitative Spore Count		
Location:	4: S. Wall Rm. 123	
Comments (see below)	None	
Sample type	Tape sample	
Lab ID-Version:	3426729-1	
	raw ct.	spores/unit
Penicillium/Aspergillus types	50	50,000
Stachybotrys	350	350,000
Ulocladium	100	100,000
Background debris (1-4+)	4+	
Sample size	1	
Unit	1 cm2	
§ TOTAL SPORES/UNIT		500,000

Table 3 Bixby North Elementary Kindergarten Hallway Retest – IAQ April 21, 2011 Spore Trap Analysis					
Location	**Total spores/m 3**	**Species**	**Raw count**	**Calc. count**	**% of total**
1: Outside - Pre IAQ	2,600	Ascospores	79	1,100	40
		Cladosporium	54	720	27
		Basidiospores	34	450	17
		Smuts, Periconia, Myxomycetes	12	160	6
		Penicillium/Aspergillus types	**7**	**93**	**4**
		Alternaria	4	53	2
		Other brown	4	53	2
		Bipolaris/Drechslera group	2	27	1
		Oidium	2	27	1
2: Hallway @ Rm. 123	4,200	Penicillium/Aspergillus types	272	3,600	86
		Cladosporium	26	350	8
		Alternaria	8	110	3
		Basidiospores	4	53	1
		Ascospores	4	53	1
		Curvularia	2	27	1
		Epicoccum	1	13	< 1
		Bipolaris/Drechslera group	1	13	< 1
3: Hallway @ Rm. 119	3,600	Penicillium/Aspergillus types	211	2,800	79
		Cladosporium	33	440	12
		Ascospores	9	120	3
		Basidiospores	8	110	3
		Smuts, Periconia, Myxomycetes	3	40	1
		Alternaria	2	27	1
		Epicoccum	1	13	< 1
4: Rm. 119	320	Penicillium/Aspergillus types	11	150	46
		Cladosporium	7	93	29
		Alternaria	2	27	8
		Basidiospores	2	27	8
		Smuts, Periconia, Myxomycetes	1	13	4
		Bipolaris/Drechslera group	1	13	4

Table 3
Bixby North Elementary
Kindergarten Hallway Retest – IAQ
April 21, 2011
Spore Trap Analysis

Location	Total spores/m 3	Species	Raw count	Calc. count	% of total
5: Rm. 116	37,000	Penicillium/Aspergillus types	67	36,000	96
		Cladosporium	63	840	2
		Basidiospores	13	170	< 1
		Smuts, Periconia, Myxomycetes	12	160	< 1
		Alternaria	10	130	< 1
		Other brown	10	130	< 1
		Ascospores	5	67	< 1
		Curvularia	4	53	< 1
		Bipolaris/Drechslera group	3	40	< 1
		Epicoccum	2	27	< 1
		Stachybotrys	2	27	< 1
		Pithomyces	1	13	< 1
6: Rm. 123	4,100	Penicillium/Aspergillus types	250	3,300	80
		Cladosporium	26	350	8
		Basidiospores	10	130	3
		Ascospores	7	93	2
		Smuts, Periconia, Myxomycetes	5	67	2
		Alternaria	4	53	1
		Other brown	4	53	1
		Bipolaris/Drechslera group	3	40	1
		Stachybotrys	2	27	1
7: Outside - Post IAQ	2,300	Ascospores	90	1,200	53
		Basidiospores	33	440	20
		Cladosporium	26	350	15
		Penicillium/Aspergillus types	**12**	**160**	**7**
		Smuts, Periconia, Myxomycetes	4	53	2
		Epicoccum	2	27	1
		Other brown	2	27	1

Table 4 Bixby North Elementary Kindergarten Hallway Retest – Rm. 118 April 21, 2011 Quantitative Spore Count		
Location:	8: Rm. 118-Book Shelf	
Comments (see below)	A	
Sample type	Swab sample	
Lab ID-Version:	3435779-1	
	raw ct.	spores/unit
Alternaria		
Arthrinium		
Basidiospores		
Bipolaris/Drechslera group		
Botrytis		
Chaetomium		
Cladosporium		
Curvularia		
Epicoccum		
Myrothecium		
Nigrospora		
Penicillium/Aspergillus types	82	2,600,000
Pithomyces		
Rusts		
Stachybotrys		
Stemphylium		
Torula		
Ulocladium		
Zygomycetes		
Background debris (1-4+)	1+	
Sample size	1	
Unit	1 cm2	
§ TOTAL SPORES/UNIT		2,600,000

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Disclaimer

This report reflects conditions discovered at the time of the survey. In many instances, mold amplification may continue following our inspection and prior to any abatement work. Therefore, additional areas of water/mold damage not mentioned above may be found during the remediation efforts (discovery). There may also be areas impacted that could not be directly inspected during Liberty OHM's survey without performing exploratory destructive testing. If any other areas of water/mold damage are found during the remediation please contact our office so that we can perform additional inspections and scope of work. In general, abatement of materials should continue an additional two (2) feet beyond any previously undetected mold or water damage discovered during remediation.

Liberty OHM makes no assertion as to the health risks associated with the levels reported in this report. We make no correlation that the levels reported are safe for occupancy or do not pose a risk from exposure. We advise you, our client to consult with an Occupational Health or other qualified physician for additional information and guidance.

If you have questions or need additional information, please let me know.

Sincerely,

Rob Thompson, CIH, CSP
President - Liberty OHM